

## **Annual Benchmark Report for Wholesale Trade: January 1992 through December 2003**

### **INTRODUCTION**

The U.S. Census Bureau produces the *Annual Benchmark Report for Wholesale Trade* to provide national estimates by kind of business of monthly and annual sales and end-of-month non-LIFO (last-in, first-out) inventories for merchant wholesale establishments. Estimates of annual purchases and gross margin are also provided.

We develop the estimates in this report using data from the Annual Wholesale Trade Survey (AWTS), Monthly Wholesale Trade Survey (MWTS), and administrative records. For each survey, questionnaires are mailed to a probability sample of firms located in the United States and having paid employees. The samples are updated regularly and periodically reselected. These samples include firms of all sizes. Additional information on AWTS and MWTS can be found on the Census Bureau website at:

<http://www.census.gov/econ/www/retmenu.html#WHOL>

### **COVERAGE**

The estimates in this publication are summarized by kind-of-business classification based on the *1997 North American Industry Classification System* (NAICS). NAICS groups establishments into industries based on the activities in which they are primarily engaged. This system was developed by the joint efforts of statistical agencies in Canada, Mexico, and the United States. The common industry definitions allow for statistics to be compared by business activity across North America.

Wholesale trade, as defined by NAICS Sector 42, includes establishments organized to sell or arrange the purchase or sale of 1) goods to other wholesalers or retailers, 2) capital or durable nonconsumer goods, and 3) raw and intermediate materials and supplies used in production.

MWTS and AWTS cover merchant wholesalers who take title to the goods they sell, such as wholesale merchants or jobbers, drop shippers, and import/export merchants. Manufacturers' sales branches of ferrous metals service centers with inventories, which are classified as Metal Service Centers and Offices (NAICS 421510), are also included.

New samples were introduced with the 1999 Annual Wholesale Trade Survey (AWTS) and with the March 2001 Monthly Wholesale Trade Survey (MWTS). The new samples were designed to produce NAICS-based estimates and replace the samples designed to produce SIC-based estimates. Detailed information about NAICS and a comparison of the SIC and NAICS systems can be found on the Census Bureau website at:

A summary of changes from the prior benchmark report and the procedures for producing the revised estimates are described below.

## **SUMMARY OF CHANGES**

Unadjusted estimates of monthly sales were revised for January 1999 through December 2003. The revised, unadjusted sales estimates reflect results from the 1999, 2000, 2001 and 2002 annual surveys. Unadjusted estimates of end-of-month inventories were also revised for January 1992 through December 2003. The revised, unadjusted end-of-month inventory estimates reflect revised end-of-year inventory estimates for the years 1992 through 2002. We derived revised annual purchases estimates for 1998 through 2001. Gross margin estimates were revised for 1993 through 2001. New purchases and gross margin estimates were derived for the year 2002.

New seasonal and trading-day adjustment factors were computed and used to adjust sales for January 1996 through December 2003. Adjusted estimates were derived beginning January 1996 instead of January 1999 because the revised 1999 unadjusted estimates can affect the computation of seasonal factors as far back as 1996. New seasonal adjustment factors were computed and used to adjust inventories for January 1992 through December 2003. Factors for both sales and inventories were developed by using unadjusted estimates as input to the seasonal adjustment program.

The revision procedures were applied to sales and inventory estimates at detailed industry levels. All other sales and inventory series were obtained by summing appropriate detail level estimates, thereby assuring additivity.

## **REVISIONS TO PREVIOUSLY PUBLISHED ESTIMATES**

### **Annual Estimates**

Sales, end-of-year inventories, and purchases for 2002 were estimated from the 2002 AWTS. For 2001, 2000, 1999 and 1998; revisions were applied to the previously published estimates of sales, end-of-year inventories, and purchases. There were no revisions to the previously published 1998 annual sales estimates.<sup>1</sup> However, the 1998 inventory estimates were revised by using inventory-to-sales ratios estimated from 1998 data collected from the 1999 NAICS-based sample. The revised 1998 inventory estimates were derived by multiplying each revised 1998 inventory-to-sales ratio from the 1999 AWTS by the published 1998 annual sales estimates. Revised 1992 through 1997 end-of-year inventory estimates were derived by multiplying each previously published inventory estimates by the ratio of the revised-to-previously published 1998 inventory estimates. For purchases, the revised 1998 purchase estimates were derived by

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<sup>1</sup>The annual sales estimates for 1998 and prior years were developed by restating the SIC-based estimates to NAICS-based estimates.

multiplying each revised 1998 purchases-to-sales ratio from the 1999 AWTS by the published 1998 annual sales estimates. Because the revisions to the 1998 purchase-to-sales ratios were small, we did not revise purchase estimates prior to 1998.

### **Estimates of Monthly Sales**

For December 1998 through December 2003, merchant wholesale sales estimates were input to the benchmarking program. The December 1998 through February 2001 estimates were developed by restating the SIC-based estimates on a NAICS basis. Estimates from March 2001 through December 2003 were derived from the NAICS-based sample. For selected kinds of business, corrections were applied to estimates. The estimates were revised in a manner that –

- constrained the sum of the 12 monthly sales estimates for a particular year to equal the corresponding annual sales estimates (benchmarks) derived for the years 1999 through 2002
- minimized the differences between the month-to-month changes of the input and revised estimates
- used the previously published December 1998 estimate to link the revised estimates to the previously published estimates.

A mathematical result of the benchmarking methodology is that all input estimates following the end of the last benchmark year (2002) are derived by multiplying these estimates by the ratio of the benchmarked-to-input estimate for the last month of the last benchmark year. Therefore, for a specified sales series, a ratio of the December 2002 benchmarked estimate to the December 2002 input estimate was computed. Estimates for periods following December 2002 were multiplied by these constant ratios (called carry-forward factors) to derive published sales estimates. The carry-forward factors remain constant until the next benchmarking operation.

### **Estimates of End-of-Month Inventories**

For January 1992 through December 2003, merchant wholesale end-of-month inventory estimates were input to the benchmarking program. The January 1992 through February 2001 estimates were developed by restating the SIC-based estimates on a NAICS basis. Estimates from March 2001 through December 2003 were derived from the NAICS-based sample. For selected kinds of business, corrections were applied to estimates. The estimates were revised in a manner that –

- constrained the December inventory estimates for 1992 through 2002 (derived from the monthly survey) to the December inventory estimates derived from the annual survey
- minimized the differences between the month-to-month changes of the input and revised estimates.

Estimates subsequent to December 2002 were derived by multiplying the input estimates by the ratio of the December 2002 published estimate to the input estimate for December 2002. This ratio is the carry-forward factor for inventory and remains constant for all series until the next benchmarking operation.

The table shown below compares the annual unadjusted sales and inventory estimates for 2003 prior to and after the revision. Revisions shown are for the sum of the monthly estimates for 2003.

#### Revision of Annual Sales and Inventories: 2003

(Unadjusted)

NAICS code	Kind of business	Sales (millions of dollars)			End-of-year inventories (millions of dollars)		
		Revised	Previously published	Percent difference	Revised	Previously published	Percent difference
<b>42</b>	<b>Merchant wholesale, total</b>	<b>2,885,034</b>	<b>2,893,527</b>	<b>-0.3</b>	<b>298,234</b>	<b>297,236</b>	<b>0.3</b>
<b>421</b>	<b>Durable goods, total</b>	<b>1,369,285</b>	<b>1,373,750</b>	<b>-0.3</b>	<b>173,806</b>	<b>173,512</b>	<b>0.2</b>
4211	Motor vehicle and motor vehicle parts and supplies	221,965	218,314	1.7	26,044	25,935	0.4
4212	Furniture and home furnishings	45,043	44,520	1.2	5,675	5,506	3.1
4213	Lumber and other construction materials	87,528	90,608	-3.4	7,883	7,586	3.9
4214	Professional and commercial equipment and supplies	252,922	250,973	0.8	23,752	23,747	0.0
42143	Computer, computer peripheral equipment, and software	110,258	112,817	-2.3	7,134	7,412	-3.8
4215	Metals and minerals, excluding petroleum	89,672	88,895	0.9	14,201	14,089	0.8
4216	Electrical goods	209,415	214,857	-2.5	21,566	22,357	-3.5
4217	Hardware, plumbing and heating equipment, and supplies	66,444	66,356	0.1	10,139	10,193	-0.5
4218	Machinery, equipment, and supplies	230,388	231,520	-0.5	43,353	43,056	0.7
4219	Miscellaneous durable goods	165,908	167,707	-1.1	21,193	21,043	0.7
<b>422</b>	<b>Nondurable goods, total</b>	<b>1,515,749</b>	<b>1,519,777</b>	<b>-0.3</b>	<b>124,428</b>	<b>123,724</b>	<b>0.6</b>
4221	Paper and paper products	77,053	73,627	4.7	6,710	6,565	2.2
4222	Drugs and druggists' sundries	260,853	261,777	-0.4	31,616	31,053	1.8
4223	Apparel, piece goods, and notions	86,030	84,680	1.6	11,807	11,676	1.1
4224	Groceries and related products	417,893	427,510	-2.2	22,989	23,440	-1.9
4225	Farm products raw materials	125,245	128,456	-2.5	14,867	13,981	6.3
4226	Chemicals and allied products	62,890	64,150	-2.0	6,109	6,099	0.2
4227	Petroleum and petroleum products	226,903	229,802	-1.3	5,676	5,636	0.7
4228	Beer, wine, and distilled alcoholic beverages	84,389	86,708	-2.7	7,050	7,079	-0.4
4229	Miscellaneous nondurable goods	174,493	163,067	7.0	17,604	18,195	-3.2

#### Reasons for Revisions

There are several reasons for revisions. The main contributors to the revision from the previously published estimates are:

- **Timing.** Respondents have more time to prepare their annual reports than their monthly reports. The annual responses are requested at a time when many firms have already compiled unaudited book figures for their own use. This includes adjustments for returns, allowances, and other customer transactions. The timing of the annual survey is such that we are also able to obtain independent verification of the reported data from

such sources as a company's annual report. On the other hand, respondents to the monthly survey have just a few weeks to provide reports of their sales and end-of-month inventories. Sometimes these reports are based on incomplete or unaudited records, including estimates by the respondents to represent their understanding of their business.

- **Sampling.** The annual sample is larger than the samples used to develop the estimates for any given month. As described in more detail in Appendix A of this report, the sample used to produce the sales estimates each month consists of certainty companies and noncertainty Employer Identification Number (EINs).
- **Response.** The annual estimates are based on more reported data than are the monthly estimates. The response to the Annual Wholesale Trade Survey is required by law. This requirement results in a dollar volume response rate for sales above 89 percent and for inventories above 87 percent. The response to our monthly survey is not mandatory. The corresponding response rates for the monthly survey are usually around 70 percent for sales and 68 percent for inventories. The sales and inventories for nonresponding firms are accounted for by an imputation process. This process assumes that nonresponding firms have trends similar to the responding firms in their respective kind-of-business.

To reduce respondent burden some of the data from the Annual Wholesale Trade Survey were obtained from data collected for single unit establishments on the 2002 Census of Wholesale Trade.

## **DEFINITION OF TERMS**

### **Dollar Values**

All dollar values presented are expressed in current dollars (not adjusted to a constant dollar series). Consequently, when comparing estimates to prior years, users also should consider price level changes.

### **Confidentiality**

Title 13 of the United States Code authorizes the Census Bureau to conduct censuses and surveys. Section 9 of the same Title requires that any information collected from the public under the authority of Title 13 be maintained as confidential. Section 214 of Title 13 and Sections 3559 and 3571 of Title 18 of the United States Code provide for the imposition of penalties of up to five years in prison and up to \$250,000 in fines for wrongful disclosure of confidential census information. In accordance with Title 13, no estimates are published that would disclose the operations of an individual firm.

The Census Bureau's internal Disclosure Review Board sets the confidentiality rules for all data releases. A checklist approach is used to ensure that all potential risks to the confidentiality of the data are considered and addressed.

## **Disclosure Limitation**

A disclosure of data occurs when an individual can use published statistical information to identify either an individual or firm that has provided information under a pledge of confidentiality. Disclosure limitation is the process used to protect the confidentiality of the survey data provided by an individual or firm. Using disclosure limitation procedures, the Census Bureau modifies or removes the characteristics that put confidential information at risk for disclosure. Although it may appear that a table shows information about a specific individual or business, the Census Bureau has taken steps to disguise or suppress the original data while making sure the results are still useful. The techniques used by the Census Bureau to protect confidentiality in tabulations vary, depending on the type of data.

## **Unpublished Estimates**

Additional statistics, such as dollar volume estimates for some kinds of business not separately shown in this report, are produced as a byproduct of the regularly published statistics. These additional estimates have not been included in this publication because of high sampling variability, poor response, or other factors that may make them potentially misleading. Upon written request, for a nominal fee the Census Bureau will release these estimates for individual use, though not for publication. It should be noted that some unpublished estimates can be derived directly from this report by subtracting published estimates from their respective totals. However, the estimates obtained by such subtraction would be subject to the poor response rates or high sampling variability described previously for unpublished kinds of business.

Individuals who use estimates in this report to create new estimates should cite the Census Bureau as the source of only the original estimates.

## **ADDITIONAL INFORMATION**

### **E-Commerce Data**

Data for e-commerce sales and electronic data interchange (EDI) can be found on the Census Bureau website at: <http://www.census.gov/estats>. Data for survey year 2002 will be released April 2004.

### **Survey Questionnaires**

The Annual Wholesale Trade Survey questionnaires can be found on the Census Bureau website at: <http://www.census.gov/svsd/www/atsforms.html>.